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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,145	09/23/2003	Milan R. Kokta	1035-BI3918-CIP	2965
34456	7590	07/20/2005	EXAMINER	
TOLER & LARSON & ABEL L.L.P. 5000 PLAZA ON THE LAKE STE 265 AUSTIN, TX 78746			VANNUCCI, JAMES	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,145

Applicant(s)

KOKTA ET AL.

Examiner

Jim Vannucci

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9-23-03 & 10-29-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS: 4-7-05 & 6-17-05 & 6-30-04

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 11-14 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang et al.(4,370,739).

Claims 1-2 and 11-12, a single crystal spinel of (MgO)(Al₂O₃) formed from a melt is disclosed with a ratio of MgO to Al₂O₃ greater than one to one(col. 2, lines 12-21 and 30-32).

Claims 3 and 14, a single crystal spinel grown by a method that provides a melt in a crucible is disclosed(col. 2, lines 30-32).

Claim 4, the material has recited has a lower mechanical stress and strain compared to a stoichiometric spinel because a stoichiometric spinel tends to be inhomogeneous(col. 2, lines 25-28).

Claim 5, the disclosed material consists essentially of a single phase of the spinel with substantially no secondary crystalline phases.

Claims 6-8 and 13, a ratio greater than 2.0:1 is disclosed(col. 2, lines 22-24).

Claim 21, a melt that is heated to a temperature greater than 2150 degrees centigrade is disclosed(col. 4, lines 62-63).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-10, 19-20 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Thony et al.(RE38,489).

Wang does not disclose the following limitations.

Claims 9 and 19, Thony discloses a ceramic material(col. 5) made from (MgO)(AlO) and Co that forms a saturable absorber Q-switch(col. 1, line 35).

Claim 10, Wang discloses a molar ratio of MgO:Al₂O₃ of between 1:1.1 to 1:1.3. Thony discloses substituting Cobalt for Magnesium(abstract line 11, since subscript on cobalt is y and subscript on magnesium is x-y) in a saturable absorber. Given these disclosures, the saturable absorber Q-switch formula Mg_(1-x) Co_(x) Al_(y) O_(z) with x greater than 0 and less than about 1, y greater than 2 and less than about 8, and z between about 4 and 13 is within the disclose range. The disclosed single crystal has tetrahedral and octahedral positions and most of the magnesium and cobalt occupy the tetrahedral positions.

Claim 20, given the disclosure of Wang and Thony referenced above, a molar ratio of Mg:Co:Al of the spinel can be (1 -x):x:y where x is greater than 0 and less than about 1, and y is greater than 2 and less than about 8.

Claim 22, the material disclosed in Wang in view of Thony has a unit cell dimension between 7.970Å and about 8.083 Å.

Claims 23-25, given the disclosures of Wang and Thony a value for z of about 4; or values of y of about 4 and z of about 7; or a value for y of about 6 and z of about 10 is possible and within the range of disclosed values.

Claim 26, Thony discloses an (MgO)(AlO) material doped with less than 1 percent Cobalt(col. 5, line 23). An amount between about 0.02 atomic weight percent and about 0.043 atomic weight percent would be obvious over this disclosure.

Claim 27, Thony discloses the material having an absorption band between about 1537 and 1544 nm(col. 3, line 55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the above referenced cobalt proportions disclosed in Thony in the material disclosed in Wang for an improved saturable absorber as disclosed in Thony(col. 2).

5. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Akselrod(6,846,434).

Wang does not disclose the following limitations.

Claim 15, Akselrod discloses growing a single crystal by contacting a seed crystal with a melt(col. 18, lines 15-19).

Claim 16, the seed crystal and the melt disclosed in Akselrod are rotated with respect to each other during growing(col. 18, lines 41-43).

Claim 17, the rotation disclosed in Akselrod is carried out at a rate within a range of about 2 to 12 rotations per minute(col. 18, lines 40-43).

Claim 18, the seed crystal disclosed in Akselrod is withdrawn from the melt within a range of about 0.04 inch per hour to about 0.1 inch per hour(col. 18, lines 38-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method disclosed in Akselrod to manufacture the material disclosed in Wang for an improved optical crystalline material as disclosed in Akselrod(cols. 1 & 2).

Correspondence

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (571) 273-8300.


James Vannucci